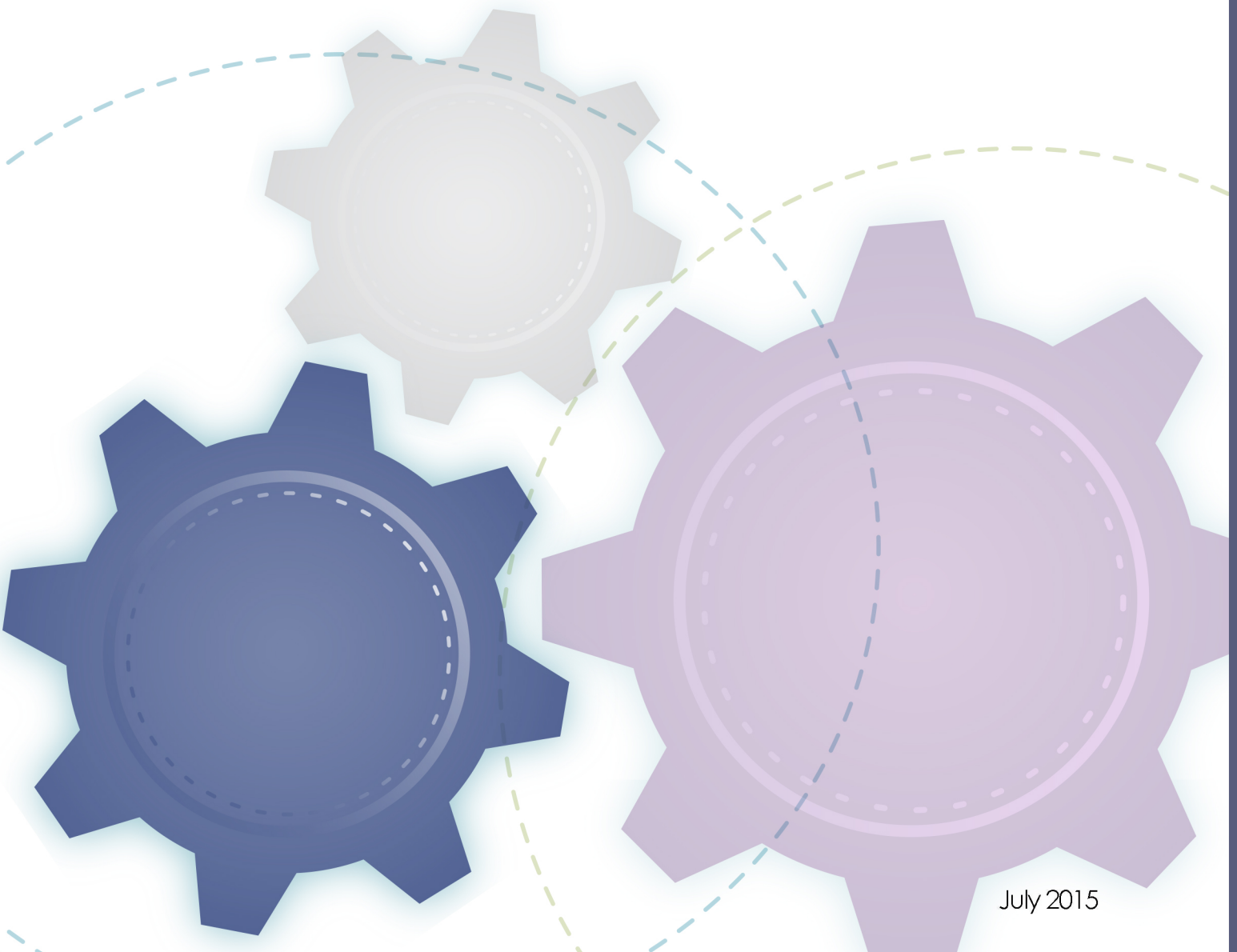




SLDS Data Use Standards Standards in Practice



July 2015



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Background

The Need

As state and local education agencies increasingly focus on serving educators with their data systems, a common challenge has arisen: identifying the critical knowledge, skills, and behaviors needed by teachers and administrators to use data effectively. Many states are creating data literacy and data use training programs for pre- and in-service educators without a common foundation on which to base the content. In addition, several state education agencies and educator preparation programs have begun communicating about how to create a stronger alignment between pre- and in-service training for educators regarding data use.

Goal and Objectives

Goal: To increase the effective use of data by educators to support student learning and success.

Objectives

1. To provide a foundation for states' development of data literacy and data use trainings.
2. To inform and improve the articulation between pre- and in-service data training for teachers and administrators.

Contents and Intended Audiences

This resource contains three case studies that illustrate the essential knowledge, skills, and professional behaviors necessary to use data effectively being applied by educators in real-world settings. It is a companion publication to *SLDS Data Use Standards: Knowledge, Skills, and Professional Behaviors for Effective Data Use*. Specific standards from that publication are illustrated in these case studies and referenced in parentheses (e.g., *K.1.A Question Formation*). See Appendix A for a complete list of standards.

This resource is intended to inform pre- and in-service educator training programs. The language is purposefully nontechnical to make it accessible for educators.

Approach

The content of this resource was developed by the Data Use Standards Workgroup of the Statewide Longitudinal Data Systems (SLDS) Grant Program. State agency staff from Hawaii and South Dakota generated the idea for the workgroup. An open invitation to participate was sent to all states via the SLDS listserv, and the workgroup was formed in November 2013.

Authors

This resource was created by the 27 members of the Data Use Standards Workgroup representing 14 states and Guam¹ and facilitated by the SLDS Grant Program State Support Team. Members represent state education agencies, local education agencies, regional service agencies, postsecondary institutions, and state P-20W+ (early childhood through workforce) longitudinal data systems. Appendix B contains the list of workgroup members.

¹ California, Guam, Hawaii, Idaho, Illinois, Kansas, Montana, Nebraska, New Hampshire, New York, North Dakota, Oklahoma, South Dakota, Tennessee, and Washington.

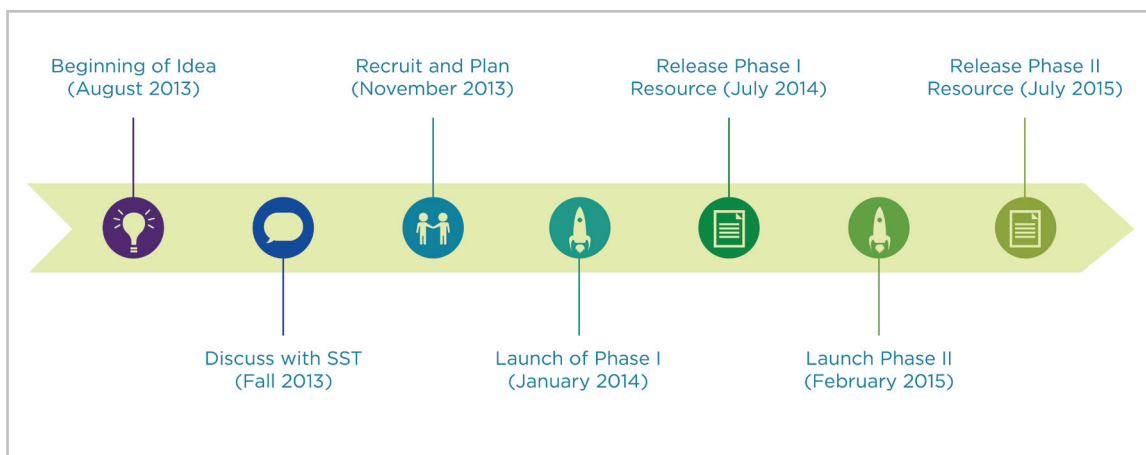


Figure 1. Timeline of the development of SLDS Data Use Standards resources.

Suggested Citation

Statewide Longitudinal Data Systems Grant Program. (2015). *SLDS Data Use Standards: Standards in Practice*. U.S. Department of Education. Washington, DC: National Center for Education Statistics.

This publication is available online at <https://slds.grads360.org/#program/data-use-standards>.

North Dakota

Introduction

Educators in North Dakota are using A+ Inquiry (see figure 2) as a framework to guide data conversations and to facilitate effective data use. A+ Inquiry promotes continuous awareness of a complete inquiry cycle to ensure, for any given data use process, that “the right context is absorbed, the right questions are asked, the right data are accumulated, accessed, and analyzed, the right answers are derived, the right announcements are communicated, and the right application is made” (Anderson, Brockel, & Kana, 2014, p. 6). This scenario applies A+ Inquiry as a lens for interpreting how an elementary teacher could implement data use standards to set reading goals with students, communicate progress to parents during conferences, and inform action to improve reading achievement.



Figure 2. A+ Inquiry framework.

ABSORB

Defining the context

Mr. Gonzalez is a fifth-grade teacher. In October 2014, he is preparing to set a reading goal with a student named Stuart. He is also preparing to discuss Stuart’s reading achievement and goals with Stuart’s parents at parent-teacher conferences in the upcoming weeks. Stuart recently completed the fall 2014 norm-referenced standardized reading assessment and will take the assessment again during spring 2015. Stuart also completed the fall 2013, winter 2014, and spring 2014 standardized reading assessments during the previous school year. During the goal-setting meeting with Stuart and the parent-teacher conference with his parents, Mr. Gonzalez would like to discuss the extent to which Stuart’s reading achievement grew from fall to spring during the previous year, how his score compares to district average and national average scores, the goal areas that represent his highest and lowest levels of achievement in reading, and his Lexile reading level. However, Mr. Gonzalez does not currently know enough details about Stuart’s reading achievement to have meaningful, relevant conversations with him or his parents (*K.2.D Data Context*).

ASK

Using questions to guide data use

Mr. Gonzalez begins the process of learning more about Stuart's reading achievement by asking the following questions:

- How does Stuart's fall 2014 scale score compare to the national average scale score for his grade level?
- How does Stuart's fall 2014 score compare to the district average scale score?
- How does Stuart's fall 2014 scale score compare to his spring 2014 scale score?
- How does Stuart's actual fall 2013 to spring 2014 scale score growth compare to his projected fall 2013 to spring 2014 scale score growth?
- How does Stuart's spring 2014 percentile compare to his fall 2014 percentile?
- What is Stuart's projected scale score for spring 2015?
- How many scale points is Stuart expected to grow between fall 2014 and spring 2015?
- How well did Stuart perform on the fall 2014 assessment in each of the reading goal areas?
- What is Stuart's Lexile level?

(K.1.A Question Formation; S.1.A Goals and Questions)

ACCUMULATE

Identifying helpful data sources

Mr. Gonzalez determines that quantitative standardized assessment reading data accumulated during fall 2013, spring 2014, and fall 2014 could help answer his questions *(K.1.C Types of Data)*. The required data were collected through a computerized adaptive assessment in alignment with administration procedures required by the test vendor *(K.2.C Data Collection; S.1.C Data Management; S.3.A Facilitation; S.3.B Technology)*.

The assessment measures academic achievement and growth in reading *(K.1.D Types of Measures; S.3.C Multiple Measures)*. Mr. Gonzalez collaborated with the school counselor to coordinate data collection for each iteration of the assessment *(B.3.A Collaborative Use)*. Testing accommodations were available for students with special needs; Stuart was allotted extra time to complete each assessment *(S.3.D Modifications)*. Mr. Gonzalez is confident using the data to answer his questions because several unique studies conducted by the test vendor and external researchers provide substantial evidence of data reliability and validity *(S.2.B Critical Evaluation; K.1.B Data Quality; B.1.A Data Quality)*. However, he acknowledges that the data alone are limited in the extent to which they provide a complete understanding of Stuart's reading achievement *(K.3.B Data Limitations)*.

ACCESS

Obtaining relevant data

Mr. Gonzalez accesses the fall 2013, spring 2014, and fall 2014 data he needs by logging into his secure account through the assessment vendor's website *(K.1.F Data Sources; S.2.A Data Discovery and Data Acquisition)*. He navigates to the reports section of the website and runs the Student Progress Report.

He specifically needs the following descriptive data:

- Stuart's fall 2014 scale score
- most recent national average grade-level scale score
- fall 2014 district grade-level average scale score
- Stuart's spring 2014 scale score
- Stuart's spring 2014 percentile
- Stuart's fall 2014 percentile
- Stuart's fall 2014 percentile category by goal area
- Stuart's spring 2015 projected scale score
- Stuart's Lexile range

(S.1.D Data Meaning).

The report presents data in a format conducive for analysis *(K.2.E Data Format)*.

ANALYZE

Determining student progress

Mr. Gonzalez dedicates time to analyze data in the Student Progress Report (*B.3.D Prioritization*). He learned how to analyze data in the report during a professional development workshop conducted by the assessment vendor (*B.4.C Professional Development*). He directs his attention to the Reading section of the Student Progress Report (*S.5.A Locating*). He analyzes descriptive data by looking at

- the fall 2014 columns to compare Stuart's score to the national and district grade-level averages;
- the fall 2013 and spring 2014 rows in the table to compare scores achieved during each term and compare the projected and actual fall 2013 to spring 2014 score growth;
- the spring 2015 score projection column to determine the spring 2015 projected score and projected growth from fall 2014 to spring 2015;
- the goal performance descriptors to determine performance in each goal area; and
- the Lexile range to determine Lexile level.

(*K.2.A Types of Analysis; S.4.D Considerations; S.4.E Comparisons; S.5.D Congruency*).

ANSWER

Responding to the questions

Mr. Gonzalez revisits the questions posed in the Ask stage. Analysis illuminated answers to his questions (*S.4.C Aligned Analysis*). He determines that

- Stuart's fall 2014 score is lower than the national grade-level norm, lower than the district grade-level mean, and lower than his spring 2014 score;
- his actual fall 2013 to spring 2014 growth was higher than his projected fall 2013 to spring 2014 growth;
- his fall 2014 percentile was lower than his spring 2014 percentile;
- he performed at a low-average level in the Literature goal area, an average level in the Vocabulary Acquisition and Use goal area, and a low-average level in the Informational Text goal area;
- his Reading scale score is projected to grow 5 points between fall 2014 and spring 2015;
- his spring 2015 scale score is projected to be 207; and
- his Lexile range is between 537-687.

(*S.5.C Patterns*).

ANNOUNCE

Communicating the answers

Mr. Gonzalez announces the answers to himself, to Stuart, and to Stuart's parents (*S.6.C Multiple Audiences*). He decides that he will assign appropriately leveled articles to Stuart for reading assignments and will group Stuart with other students achieving at similar levels during relevant lessons. He keeps the printed reports in Stuart's file in the file cabinet under his desk to ensure that the documents will not be viewed by someone other than Stuart or his parents (*B.2.A Rules and Laws; K.3.D Privacy and Security; B.1.D Ethics; B.2.B Protection*).

Mr. Gonzalez announces the answers to his questions about Stuart's reading achievement to Stuart during a teacher-student goal-setting meeting. He retrieves the Student Progress Report and Student Goal-Setting Worksheet from the assessment vendor's online reporting website to use as visual aids when communicating the answers to Stuart (*S.6.A Presentation*).

He uses the Student Progress Report to inform Stuart that

- he is performing slightly lower than the average for other fifth-grade students in the nation and the district;
- his score grew more than expected from fall 2013 to spring 2014, but his fall 2014 score is lower than in spring 2014;
- he is scoring lower than more students in the nation this fall than he did last spring;
- he is projected to grow 5 points by the following spring; and
- he is performing at a low-average level in Literature, an average level in Vocabulary Acquisition and Use, and a low-average level in Informational Text.

(*B.1.B Transparency; S.6.B Explanation*).

Mr. Gonzalez and Stuart use the Student Goal-Setting Worksheet to set a goal for Stuart to grow 5 points by spring 2015 and set an action plan for Stuart to read one appropriately leveled article per week based on his Lexile range (*S.7.B Action Plan*). The articles can be accessed through various websites offering Lexile-leveled literature (*S.7.A Strategies*). Mr. Gonzalez and Stuart agree to measure progress toward Stuart's goal following subsequent standardized assessments completed during the winter and spring terms.

A couple of weeks following the goal-setting meeting, Mr. Gonzalez announces the answers to Stuart's parents during parent-teacher conferences (*B.1.B Transparency*). He uses the Student Progress Report and Student Goal-Setting Worksheet to facilitate a conversation about Stuart's reading achievement, goal, and action plan (*B.1.B Transparency*; *S.6.B Explanation*; *K.1.G Data Representations*). He provides Stuart's parents with links to the websites where appropriately leveled articles can be retrieved online and encourages Stuart's parents to support his goal and action plan to read one online article per week at home.

APPLY

Implementing the action plan

Mr. Gonzalez, Stuart, and Stuart's parents take action intended to improve Stuart's reading achievement (*B.4.B Improving Outcomes*). Mr. Gonzalez assigns appropriately leveled articles to Stuart and groups Stuart with other students achieving at similar levels during relevant lessons. Stuart reads one appropriately leveled article per week at home based on his Lexile level. Stuart's parents encourage him to implement his action plan at home and help him access appropriately leveled articles online.

Mr. Gonzalez periodically checks in with Stuart and his parents to determine if adjustments need to be made and if progress is occurring (*S.7.B Action Plan*; *S.7.A Strategies*).

AWARENESS

Staying engaged

Mr. Gonzalez demonstrates awareness throughout the process, ensuring that the right context is absorbed; the right questions are asked; the right data are accumulated, accessed, and analyzed; the right answers are derived; the right announcements are communicated; and the right applications are made. (*S.1.B Alignment*).

NOTES

- A+ Inquiry framework adapted from Anderson, N. C., Brockel, M. R., and Kana, T. E. (2014). Disciplined inquiry: Using the A+ Inquiry framework as a tool for eliminating data hoarding, mindless decision-making, and other barriers to effective ESA programming, *Perspectives: A Journal of Research and Opinion About Educational Service Agencies*, 20(3).
- This scenario was informed by a Northwest Evaluation Association Measures of Academic Progress (NWEA MAP) reading assessment commonly administered to elementary school students in several districts throughout the U.S. Terms and acronyms specific to NWEA MAP assessments were written in generalized language to simplify concept interpretation for readers lacking familiarity with NWEA MAP. For more information visit www.nwea.org.

Metropolitan Nashville Public Schools

Introduction

Metropolitan Nashville Public Schools (MNPS) is the 42nd-largest school district in the United States, with approximately 87,000 students. Using Race to the Top funding, Fred Carr, the chief operating officer for MNPS, led the development of a data warehouse in 2011 to begin consolidating data silos that existed across the district (*S.3.B Technology*). Having a district data warehouse led to some interesting observations and questions (*S.2.A Data Discovery and Data Acquisition*). One interesting observation made by Dr. Tony Majors, chief officer of support services, was a trend among chronic absence data and other types of data, such as at-risk, discipline, and grades (*S.4.E Comparisons*). The initial observations led to a deeper data dive into the issue of chronic absence (*S.5.C Patterns*).

After seeing the initial trends in chronic absence, a meeting was convened to investigate the trends. The driving question for the meeting was “What effect(s) does chronic absence have on student achievement and discipline?” (*K.1.A Question Formation*). While initially the data indicated a relationship, it was critical that more data be included and more people be involved in the discussion before developing an initiative around the issue (*S.3.A Facilitation; B.3.B Collaborative Climate; B.3.C Outreach*).



Figure 3. MNPS representatives meet to discuss trends in chronic absence among students.

After analyzing data from multiple sources (*S.3.C Multiple Measures*), it was determined that the attendance data needed to be viewed from the lens of chronic absence and not just attendance rate (*S.1.A Goals and Questions; S.7.A Strategies*). Attendance rate alone was masking some issues for several of MNPS’s lowest performing students (*S.5.B Representation*). With the key issue identified, three critical solutions were developed:

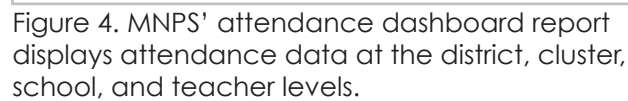
1. Build a core team’s capacity about chronic absence
2. Create a data warehouse attendance report to depict chronic absence data
3. Develop training support materials

(*S.7.B Action Plan*).


BUILDING A TEAM’S CAPACITY

Although staff within the district knew about chronic absence, there was some uncertainty about what it truly meant, particularly when reporting a data point (*S.1.B Alignment*). MNPS reached out to Attendance Works, a national and state initiative that promotes better policy and practice around school attendance. After meeting with representatives from Attendance Works, common language defining chronic absence was adopted. MNPS adopted Attendance Works’ definition for chronic absence: Students are chronically absent if they are “missing 10 percent or more of school days including all absences, excused or unexcused or even suspensions” (Attendance Works, 2014) (*S.1.D Data Meaning*).

With a common definition for chronic absence, the MNPS Office of Support Services and Data Warehouse team collaborated to develop an attendance dashboard report (see figure 4) (*S.1.C Data Management*). It took approximately a week to develop and finalize the report. Currently, a dashboard report is updated every 24 hours and reflects the most recent data. In the MNPS data warehouse, data can be viewed at the district, cluster, school, and teacher level based on assigned security roles (*B.1.D Ethics*).



A common assumption made around data use is that all educators understand the data. However, a national study of districts known for strong data use found teachers showed difficulty with posing questions and comprehending and interpreting data, with teachers correctly interpreting given data in only 48 percent of instances (U.S. Department of Education Office of Planning, Evaluation and Policy Development, 2009). To address this issue, MNPS's business intelligence coordinator, Dr. Margie Johnson, facilitated the development of various training support materials (*B.3.B Collaborative Climate*).



Does Attendance Really Count in Our School?

A Tool for Self Assessment - (Revised June 2012)

Key Element	Strength	OK for Now	Could be better	Urgent Gap	Don't Know	How do you know?
1. Attendance is accurately taken and entered daily into the district data system in all classrooms.						
2. Our school has a clear and widely understood attendance policy.						
3. A team including the site administrator reviews attendance data on a regular basis to identify chronically absent students and monitor attendance patterns by grade, student sub-groups and classroom.						
4. Our school offers such rich and engaging learning activities that students do not want to miss school.						
5. Our school recognizes and appreciates good and improved attendance.						
6. Our school informs parents about the importance of attendance and encourages parents to help each other get their children to school.						
7. Our school identifies and reaches out to chronically absent students and their families in a caring manner to see how attendance could be improved.						
8. Our school partners with community agencies that offer resources (pre-K, afterschool, health services, volunteer mentors, transportation) that can help engage students & their families and remove barriers to getting to school.						
9. Individual learning plans are developed for high-risk students and address poor attendance along with low academic performance.						
10. Our school discipline policy and practice ensure students do not miss instruction due to suspensions for non-violent behaviors.						
11. Our strategies for supporting student attendance are reflected in our school improvement plan.						

(Note: Chronic Absence is missing=> 10% of school over a year including any type of absence; Satisfactory Attendance is missing=< 5% of school over a year)

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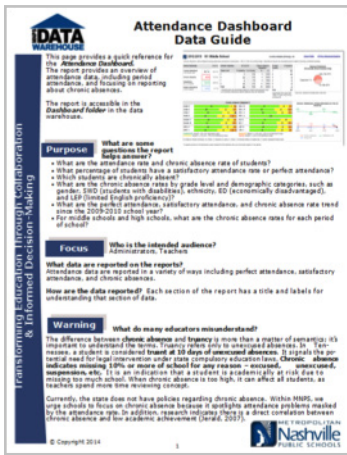


Figure 6. The Attendance Data Guide is part of MNPS's Attendance Toolkit.

After multiple datasets from the focus groups were analyzed, two trends emerged (*S.3.C Multiple Measures; S.5.C Patterns*): the need for a standardized, documented process and the need for a communication plan. MNPS data analyst Sarah Vinson worked with the schools to document the process (*K.1.B Data Quality; K.2.E Data Format*). This documentation was shared in a meeting at the central office to finalize the process (*B.3.B Collaborative Climate*).

Once the team agreed upon the documentation, a communication plan was developed. The plan included the creation of an Attendance Toolkit with the standardized process, a Quick Reference Guide, and an Attendance Data Guide (see figure 6) (Rankin, 2015) to be disseminated across the district (*S.6.C Multiple Audiences*). One theme that emerged during the development of the plan was the word “care.” The team used that theme to name the initiative C.A.R.E. (Connecting Attendance to Results in Education).

The best part of the data-informed initiative is the ability to monitor its progress. The initiative launched in August 2014. By October 2015, MNPS saw a 5 percent decrease in chronic absence across the district (*B.4.B Improving Outcomes*).

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Manchester, New Hampshire

Introduction

The Manchester School District is the largest school district in New Hampshire, with 14 elementary schools, four middle schools, and four high schools. There are approximately 1,100 students in each grade from kindergarten through 12th grade. The district has battled budget reductions and administrator turnover. A large percentage of students are not meeting state-measured proficiency in math and English language arts.

For many years the data showed approximately 60 percent of students were not proficient in math, reading, and writing, as measured by the state assessment. The trend over the past several years was not showing improvement. In fact, in some subjects and grades fewer than half of students demonstrated proficiency, with some rates as low as 32 percent (see figure 7).



Figure 7. State summative assessments show student proficiency in math, reading, and writing.

In summer 2014, the district administration in Manchester launched a targeted effort to use data to inform instruction, with a goal of improving student performance. The administration approached the New Hampshire Department of Education (DOE) and enlisted SLDS data coaches to help create a culture and practice focused on effective data use. Initial work was focused on kindergarten through eighth grades. Although the district had a subset of schools identified by the state as 'priority' schools, the superintendent felt strongly that support should be provided to all schools in the district. The use of data to inform instruction was considered valuable for all schools, not only those with the lowest proficiency.

Through a collaborative discourse, the data coaches and the Manchester Leadership Team talked about the data needs and current data climate in the district. These discussions answered many questions, but also unearthed more.

Initial meetings were held during the summer, and a plan was developed to create local assessments and improve existing assessments with a consistent approach throughout the district. District officials developed templates to define the assessment schedule, identified key personnel for data teams, discussed a communication plan, and identified gaps for further discussion (see figure 8, next page). The work was ready to begin.

Key Knowledge, Skills, and Professional Behaviors were identified as part of the initial definition of the work.

Knowledge. The initial work centered on understanding the question that Manchester wanted to answer (*K.1.A Question Formation*) and what data sources (*K.1.F Data Sources*) already existed within the schools. The leadership needed to determine what types of measurements (*K.1.D Types of Measures*) would be used to inform instruction. Questions about how to collect the data (*K.2.C Data Collection*) and how to analyze the data were discussed (*K.2.A Types of Analysis*). The Leadership Team decided to use the PerformancePLUS data analysis tool (*K.2.B Data Analysis Tools*).

Skills. The initial discussions focused on planning what would be accomplished during the upcoming school year (*S.1 Planning*), who would manage the work (*S.1.C Data Management*), what the district goals were, and what questions teachers would be able to answer (*S.1.A Goals and Questions*). A heavy emphasis was placed on communication. District officials discussed how the flow of information would be managed to ensure a single, clear message for multiple audiences (*S.6.C Multiple Audiences*), including the teachers and administrators.

Professional Behaviors. It was immediately evident that there was no consistent culture across the schools (*B.1.E Culture*). The district wanted to ensure that there was an emphasis on collaboration (*B.3.B Collaborative Climate*) across schools. The importance of engaging leaders within the schools led to an initial meeting with all principals. The need for teacher training (*B.4.C Professional Development*)—specifically related to how teachers would learn about the collection and use of this data—was also part of the initial discussion.

INITIAL STEPS: THE PROJECT TAKES OFF

Administrative leaders, data coaches, and a small group of teachers who had been involved in analyzing data in prior years formed a district team to help build a foundation for the work that was about to begin. They met to define the initial steps and analyze existing data. Discussions uncovered pockets of assessment and data analysis that had been performed by educators in past years and could be leveraged so that the team did not have to start from scratch. It is important in data work that educators see the connection with previous work and current initiatives, so they do not see it as “just another new initiative.”

The district team learned that new mid- and end-of-year math assessments had been written and administered throughout the elementary schools. They used an assessment inventory template for this (see figure 9, next page). A system had also been put in place to allow teachers to enter students’ math data into PerformancePLUS, the New Hampshire data system. PerformancePLUS could have been used to generate reports to monitor student growth, but only a few people in the Manchester district knew how to generate these reports. No system was in place to review the data after they were entered.

While the overall district plan was being finalized, data coaches met with data teams at each school to assess their current capacity and to begin creating awareness and education about how to analyze data. A structured data dive methodology was used to walk data teams through an analysis exercise. A few key observations came out of this work: the school data teams had minimal experience and skills analyzing data, teams were at very different levels of data maturity from school to school, and there was no consistency from school to school as to what assessments students were taking. However, a consensus was reached that data should be used not only to analyze grade-level instruction, but also to ensure that students were proficient in core content.

To guide the initial and ongoing work, a district-level leadership team was created for each content area (math and English language arts) at both the elementary and middle school levels. Each team included a district-level content leader and experienced Manchester educators working alongside a data coach.

Although most of the district data teams had strong teacher representation, the data coaches struggled to ensure that key teachers representing every school in the district were identified. Not having ownership for the school-level work caused some bumps in the road as the work was first developed and rolled out.

Proposed Approach To Engage Data Teams

The following is a proposed plan to help support data teams at the Priority schools. It provides a suggested schedule for the next few months with some additional recommendations for the remainder of the year.

A few of guiding principles...

1. The DOE will provide a data coach to help along the way.
2. Each school should identify a data team, with a team lead.
3. We need to recognize the successes and hard work of the data team and educators.
4. The principal should be an active member of the data team.
5. The team should be given the required time to have at least bi-weekly meetings.
6. The team and principal must collaborate and receive support to implement interventions and system changes identified as necessary to address data driven instruction.

Suggested goals and approach for first few months.

September: Building the data team and understanding base data.


- Schools needs to identify data team --(including a lead, ideally not principal)
- We will hold a district-wide (ie. 7 schools) full day meeting with the following agenda:
 - Discuss data tools/offerings [Mike and Karen]
 - Describe data team best practices (how to implement a data team) [Donna, Rob and Southside data lead]
 - Breakout and perform the data meeting protocol (data dive) [Rob to introduce; Donna, Karen, Mike and Rob to facilitate]
- Prerequisites
 - > Donna Crook needs to load data
 - > Principal, and full data team should attend

October: Initiate the data team, further understand the data, identify priorities and develop the ID10 plan.

- ☐ Data teams should analyze data back at each school.
- ☐ Data teams should be meeting biweekly.
- ☐ Data teams should identify priorities.
- ☐ Create inventory of interventions resources: material resources / programs, expertise of educators in building, availability of resources.
- ☐ Data teams should begin developing ID10 plans.
- ☐ Plans should consider both Core and interventions, as appropriate. It should include instruction and professional development needs.
- ☐ Data coaches will attend one October meeting to facilitate ID10 plan

Figure 8. Sample approach plan.

Data ToolKit

 New Hampshire
Department of
Education

Data Inventory: What Do We Have?

(Assessment, Demographic, Climate,)
Example

Name of Assessment	What is assessed	When Given	To whom?	Formative or Summative	How is the data recorded/stored?	Who is responsible for the data?
Fountas and Pinnell	Fluency Comprehension Accuracy	October and May	Students K-4	Formative	Paper files	Classroom teachers
Student Perception Survey	Student perception of safety, respect and community in our school	November	Students K-5	Formative	Survey monkey	Assistant Principal
Mid Year Math	Grade Level Math to date	End of January	All Students	Both	Google Drive	PLC Teams
Writing <u>Narrative</u>	Student Writing Ability	September February May	All Students	Both	Google Drive for prompts	PLC teams

Figure 9. Sample assessment inventory worksheet.

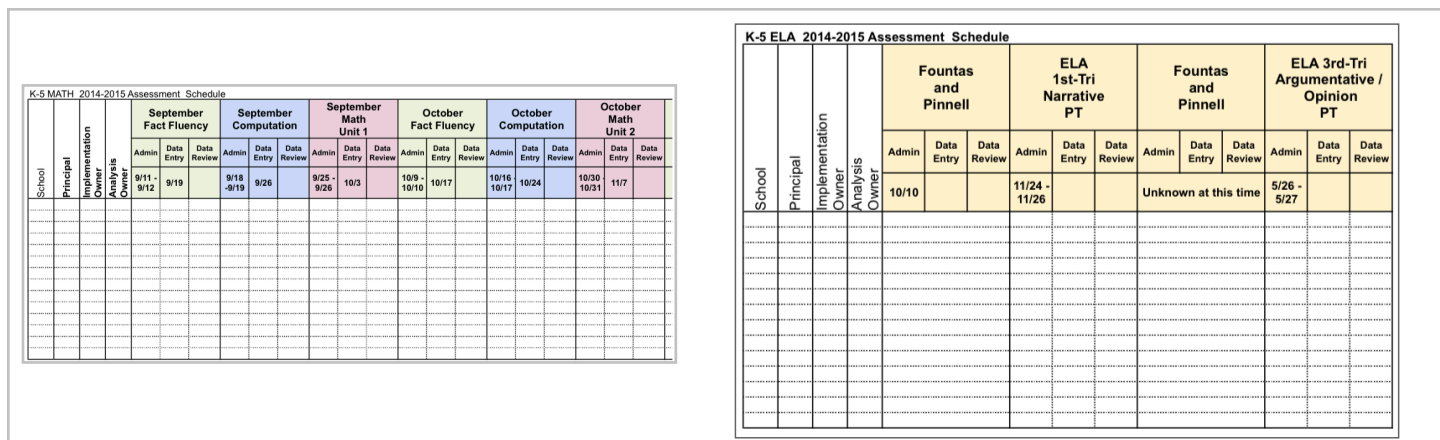


Figure 10. Sample assessment schedule.

After reviewing the assessments and data, the teachers, data coaches, and math and literacy coaches determined that new assessments should be written that (1) are aligned with Manchester Standards, (2) are aligned with the units of study being taught, and (3) give more information to teachers about their students' basic skills.

Math

- Math Fluency Assessments: Short (three-minute), monthly assessments for grades K-8 to test math fluency (e.g., addition, subtraction, multiplication, and division).
- Math Computation Assessments: Short (15- to 20-minute), monthly assessments to measure grade-level computation skills.
- End of Unit Assessments: Performed at the end of each unit to assess student learning for that unit.
- Performance Tasks: Quarterly performance tasks to provide a comprehensive review of student learning.

English Language Arts

- K-5 Fountas and Pinnell Benchmark Assessments.
- K-5 Summative Performance Tasks for each of three writing units.
- Grades 6-8 Pre and Post (Beginning and End of Year) Argumentative Writing Assessments.
- Grades 6-8 quarterly performance tasks for each unit.

A timeline was created for a comprehensive assessment program (see figure 10).

A plan was now in place to administer assessments, analyze student results (through school-based data teams), and make instructional decisions. Many details needed to be worked through, but the initial assessment work had begun.

As the project was formed and the assessment work began, Knowledge, Skills, and Professional Behaviors were critical to the work and success.

Knowledge. Through this phase of work, the questions being addressed were further defined (*K.1.A Question Formation*). For example,

- Did students have core math competencies required for basic learning?
- Were students learning the unit goals?
- Was there a common set of writing expectations across cross-content educators?
- What were students' individual writing abilities?

The district team helped unveil what existing types of quantitative data (*K.1.C Types of Data*) and measurements (*K.1.D Types of Measures*) currently existed in the schools, and it discussed the lack of teacher awareness about how assessment data should be used (*K.2.D Data Context*). The team discussed the importance of the data tools and how to take advantage of existing tools (*K.2.B Data Analysis Tools*), as well as the format in which data would be presented (*K.2.E Data Format*).

Skills. As part of forming the assessment plan, the district team discussed the purpose of existing assessments and the meaning of the data (*S.1.D Data Meaning*). Some national assessments were being conducted, but the existing data were not

providing the information necessary to answer the questions being addressed, thereby preventing instructional analysis and change. The selection of assessments and the decision to develop local assessments were critical early steps (*S.2.B Critical Evaluation; S.2.C Development of Measures*).

The team decided to collect multiple measures covering both student core knowledge and grade-level content (*S.3.C Multiple Measures*). It also discussed how to communicate the information, and the lead district administrator was selected to be the lead ‘cheerleader’ and communicator. However, over the course of this initial work, the team learned that frequent communication with the teachers was also critical. Improved communication was necessary for the ongoing work.

Professional Behaviors. The district team discussed the history of data use in the district. It was important to understand the existing culture (*B.1.E Culture*). To build support, the team stressed transparency so that teachers would understand the intent (*B.1.B Transparency*). The initial data dive sessions stressed the importance of not misrepresenting data (*B.1.C Representation*). Educators saw how they might have predetermined misconceptions of assessment results. The district team also discussed the required level of data access and protection (*B.2.B Protection*) and what relevant laws allowed (*B.2.A Rules and Laws*). The team decided to ensure that teachers had broad but appropriate access for transparency and to empower them to analyze results and improve instruction. In prior years, access was limited to such a degree that it prevented collaborative use (*B.3.A Collaborative Use*) and a collaborative climate (*B.3.B Collaborative Climate*). Reviewing the prior year’s efforts allowed for a tenor of continuous improvement (*B.4 Continuous Improvement*).

PROJECT EXECUTION

With goals in place and the data identified for collection and analysis, the detailed operational questions were now addressed and the implementation went forward.

Several detailed processes were established to collect data and analyze the results. This work is an ongoing effort, with bumps and lessons learned along the way. It will certainly take multiple years to develop a smooth process.

Collecting Data

As described above, district data teams that were focused on elementary- and middle-school-level math and English language arts worked to create monthly and end-of-unit assessments. They used existing materials where possible to take advantage of prior work. They spent time identifying the contents of each assessment, agreed upon cut points that would define proficiency for students, and worked collaboratively to develop a common understanding of how these local assessments would be scored. For example, for a simple math fluency assessment, the team determined the number of addition problems, the time a student would have to take the assessment, and the required score to demonstrate proficiency, as well as other cut points. For the writing rubric, the team identified the metrics that would be addressed (e.g., Organization – Adequate progression of ideas, use of transitional words, phrases, or clauses usually help the reader connect and clarify ideas, conclusion connects to the argument, etc.), identified valid writing prompts, and determined the approach to score and cross-score the students’ work.

The district teams created versions of the math and reading assessments for each month. For some assessments—such as the math fluency and computation monthly assessments—the assessments were similar each month. For others, such as end-of-unit assessments, the content changed each month. The team used a district Google Drive to share materials with teachers. Although this enabled access, the need for a more controlled, top-down, and timely communication plan remained.

In addition to administering the test, a process was defined to populate the PerformancePLUS data system with the assessment results. Using this tool allows the teachers and administrators to analyze the data. PerformancePLUS also allows teachers and administrators to access the appropriate data. The system already included student background information (e.g., gender, race, class roster, and attendance), allowing for analysis across multiple factors. During the first few months of the project, the district data team worked to get all the assessment materials on Google Drive at least a month ahead of the timeline. Most of the work will likely be in place for the second year.

With the materials in place, a series of communications and meetings were implemented to educate teachers on the assessment schedule and procedures. The collection of data had begun.

Data Analysis

Data coaches played a primary role in creating the reports, which allowed administrators and teachers to analyze the student results. Often, standardized assessments are conducted at schools without the data being used to influence instruction.

As described above, the data coaches worked with schools to perform a data dive methodology (see figure 11). This process helped focus the discussion on identifying how school factors and instruction could be modified to improve student outcomes. Participants went through a four-step process. After setting discussion norms, team members predicted perceptions of the student outcomes. They then analyzed data reports without discussing causation (a “No Because” sign was used as part of the norms to discourage participants from discussing why the data might look the way they do). After reviewing the data, the team then made inferences and identified additional questions it might need to answer. Finally, the team discussed implications for the school practices as well as next steps. Although the data coaches worked with all schools to perform these data dives, it will take time for the dives to become entrenched as part of the school culture. The work will continue to reach additional educators in each school.

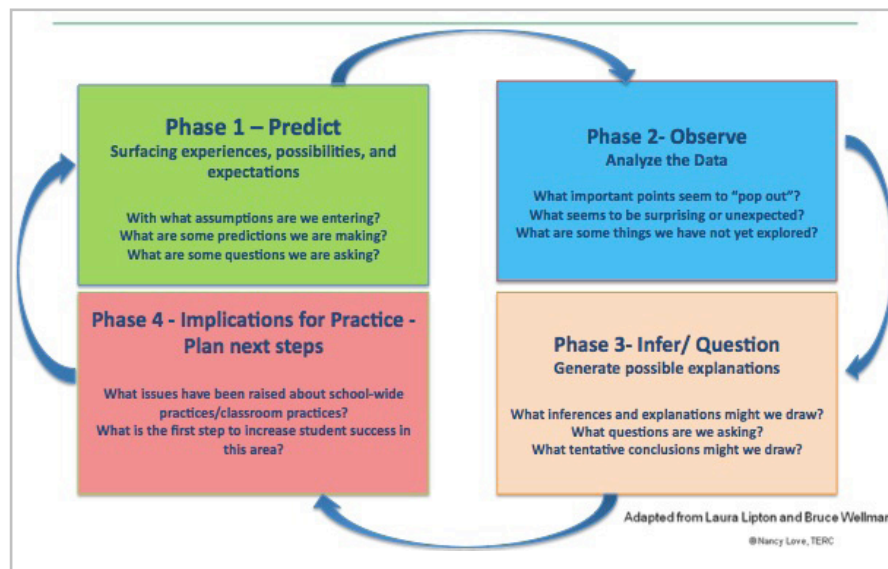


Figure 11. Sample data dive protocol.

In addition to data dives, the data coaches developed reports for the administration. Part of the initial goal of this effort was to create consistency across the district and to look at core instruction across the district. Analysis of district-wide data led to meaningful discussions that helped guide school and district decisions. For example, school and district officials realized the need to focus on core math fluency at the earlier elementary levels and the need for upper elementary teachers to be open to review and remediation (see figure 12, next page). At the middle school level, a Professional Learning Community (PLC) system was used to look at writing skills for all sixth- through eighth-grade students. Teams of teachers from all disciplines looked at writing prompts and rubrics, dissected sample student writing pieces, and began to understand the value of a team approach to understanding student writing skills based on standards-aligned assessments.

Much work is still needed to ensure that administrators and educators use the data effectively. The infrastructure is in place for most schools but must still be expanded to all schools. Collectively, the analysis is expected to improve student outcomes, and review will continue in future years.

Through the process of collecting and analyzing the data, Knowledge, Skills and Professional Behaviors were critical to success.

Knowledge. This phase of work included collection (*K.2.C Data Collection*) of the defined measurements (*K.2. C Data Collection; K.1.E Data Metric*). Rubrics were defined and reviewed to collect quantitative data (*K.1.C Types of Data*). The data format for the assessments was defined to ensure that data were collected as intended (*K.2.E Data Format*). The data collection steps were clearly defined (*K.2.C Data Collection*). Educators were provided the data context so that they would understand why the data were being collected (*K.2.D Data Context*). The team discussed and determined what data privacy measures should be in place for both the implementation documents and student data (*K.3.D Privacy and Security*). The team recognized the limitations of both the existing data and the data that would be collected (*K.3.B Data Limitations*).

Skills. During this phase, there was very little time between planning and collecting the data (*S.1 Planning; S.3 Collecting*). The data management (*S.1.C Data Management*) process was defined just in time to develop the measures (*S.2.C Development of Measures*). The measures had to consider what scores would be captured for each student so that valuable interpretations could be made to influence instruction (*S.2.C Development of Measures*). Initial data dives demonstrated how individuals can often misrepresent the understanding of data; teams would first describe what they thought the data would tell them, but when analyzing the data they found they were often mistaking student outcomes when viewing the actual results (*S.5.B Representation*). The district data team and school-level teams have begun creating strategies and action plans based on the findings in the data to improve student outcomes (*S.7.A Strategies; S.7.B Action Plan*).

Professional Behaviors. Work must continue, but the foundation is in place to entrench a culture and climate that enables the collaborative use of data (*B.1.E Culture; B.3.B Collaborative Climate; B.3.A Collaborative Use*). Professional development must be expanded to ensure that teachers have a personal ethical commitment to prioritizing the use of data (*B.4.C Professional Development; B.1.D Ethics*). The PerformancePLUS system was used in part because it provides the security to meet the rules and laws to protect students (*B.2.A Rules and Laws; B.2.B Protection*). As the district team and data coaches proceed with continuous improvement in mind (*B.4 Continuous Improvement*), a focus will drive problem solving by using data to improve instruction (*B.4.A Problem Solving*).

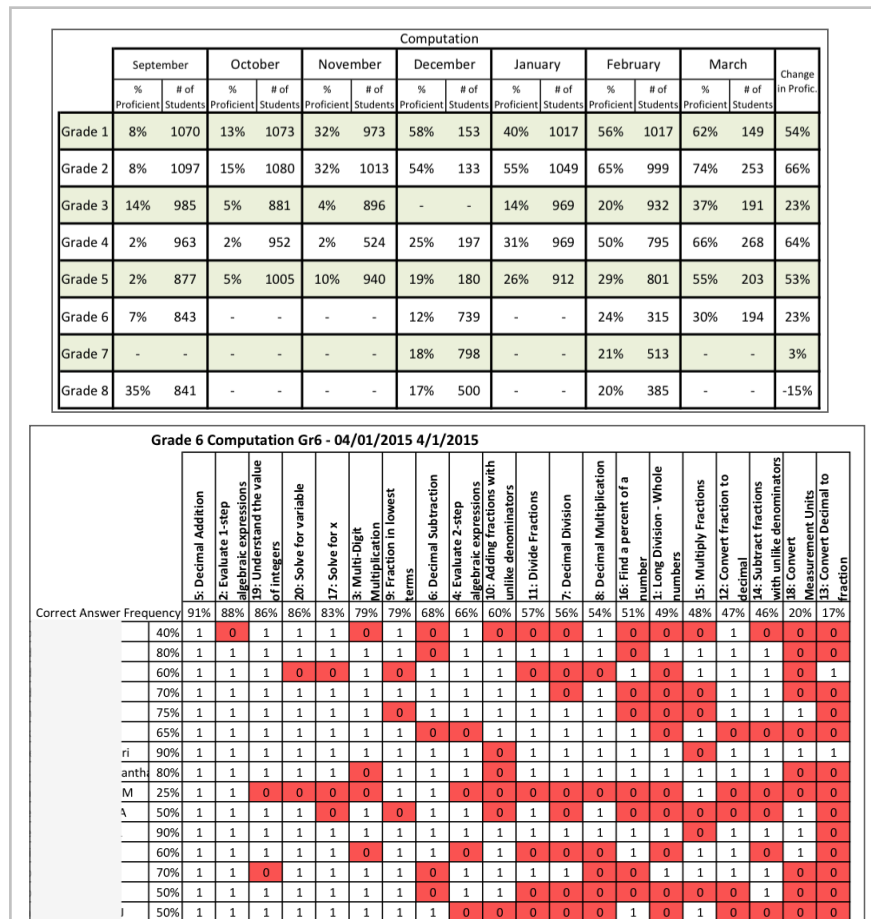


Figure 12. Sample data analysis reports: by grade, individual results.

LESSONS LEARNED: THE FINAL LANDING

This work resulted in significant contributions and achievements. It was driven by top district administrators and executed by teachers, specialists, and principals working alongside data coaches. However, more work is needed to address gaps in the initial implementation. Initial challenges included setting up the system of administering new assessments and collecting the data.

Communication

The need for consistent and early communication should be a focus for the ongoing work (*S.6 Communicating*). Teachers needed more time to process and understand the data collection (assessment) requirements to ensure consistent collaboration (*K.2.C Data Collection; B.3. Collaboration*). Communication in a school district this large was inconsistent. No generally accepted processes were in place to keep principals and teachers informed of changes. Multiple versions of documents were sometimes sent to schools, which created data inconsistency and added to the confusion (*K.1.B Data Quality*). Disseminating information was a bit easier at the elementary level than at the middle school level.

All the teachers should have a clear understanding of the questions being addressed (*K.1.A Question Formation*), the types of data and measurements being collected (*K.1.C Types of Data; K.1.D Types of Measures*), the meaning of the data (*K.1.E Data Metric*), the need to focus on data quality (*K.1.B Data Quality*), and the data analysis tools (*K.2.B Data Analysis Tools*). The focus from the beginning should include a discussion about how the collected data will provide value to the educators, as well as how they can and should use the data to inform instruction.

Metrics Review

The full district administrative team should review and analyze the data on a regular basis to understand the findings, ensure full compliance, discuss ways to tweak the implementation, and implement instructional change for students. The full administrative team—including all principals—must have increased professional development to be able to critically evaluate the data at monthly team meetings (*B.4.C Professional Development; S.2.B Critical Evaluation*). The work data coaches have performed to format and compare the data (*S.4.A Formatting; S.4.E Comparisons*) should be done by the administrators.

Time

It is vital that leaders of this initiative be provided with the dedicated time to complete the work; it should be a clear priority with an emphasis on outreach (*B.3.D Prioritization; B.3.C Outreach*). For example, seven of the 14 elementary schools had math coaches. Schools with assigned coaches were more informed than those without coaches and therefore more successful in planning, analyzing, and interpreting the work (*S.1 Planning; S.4 Analyzing; S.5 Interpreting*). Information was to go through principals for un-coached schools, but no system was established to communicate on a regular basis (*S.6 Communicating*). Additionally, at the middle school level, classroom teachers rather than math coaches were driving this work. The teachers had very little time to work on the assessments, to use data to solve problems (*B.4.A Problem Solving*), or to continually improve the implementation structure (*B.4.B Improving Outcomes*). Over time, all principals and math teachers received information, but ensuring more dedicated time for a lead in each school would have allowed for more consistency and ownership at the school level.

Professional Development

The infrastructure is in place to solidify a collaborative data culture in Manchester (*B.1.E Culture*). The fundamental knowledge for identifying the types of measurements (*K.1.D Types of Measures*), the data collection (*K.2.C Data Collection*), and the analysis tools (*K.2.B Data Analysis Tools*) are in place. Critical evaluation has begun (*S.2.B Critical Evaluation*); reports have been formatted (*K.2.E Data Format*); and patterns have been identified by those most involved in the analysis effort (*S.5.C Patterns*). Although the data are being collected at most schools for the vast majority of students, the data are being entered inconsistently across the schools, which indicates a need for improved high-quality data (*K.1.B Data Quality*).

The schools led by principals with experience using data to inform instruction are faithful to the process. They understand that it takes time, and they trust in the process. The schools with math coaches on staff are also moving forward with data review and analysis. But to develop a system culture (*B.1.E Culture*), the district must increase professional development (*B.4.C Professional Development*) to continuously improve (*Professional Behaviors, Continuous Improvement*) and ensure that all teachers can solve problems to improve instruction (*B.4.A Problem Solving*). Teacher teams must have the time to focus on learning the system practices that have been put in place. School-level and district-level meetings must increase their discussion of these practices and of the value inherent in this analysis, and professional development should highlight the positive impact on student performance.

SUMMARY

The New Hampshire SLDS team hopes to continue working with the Manchester School District. The district has made huge gains in the past year for its students and for its teachers. At the beginning of 2014, teachers were not following common units of study, they did not have common assessments that aligned with their standards, they had very little data, and—for the most part—teachers did not have a formal data analysis and review process to inform and improve their instruction.

By the end of the 2014–2015 school year, common units of study will be in place, common assessments for all students in kindergarten through grade 12 will be used, and data will be collected based on those assessments. The process of analyzing and using the data will have begun.

During the 2015–2016 school year, officials hope to continue the assessment and data collection process and make large strides toward building a collaborative culture in which all teachers are engaged with using data and improving student learning.

Appendix A: Data Use Standards

KNOWLEDGE

K.1 Fundamental

- K.1.A Question Formation
- K.1.B Data Quality
- K.1.C Types of Data
- K.1.D Types of Measures
- K.1.E Data Metric
- K.1.F Data Sources
- K.1.G Data Representations

K.2 Processing

- K.2.A Types of Analysis
- K.2.B Data Analysis Tools
- K.2.C Data Collection
- K.2.D Data Context
- K.2.E Data Format

K.3 Considerations

- K.3.A Data Assumptions
- K.3.B Data Limitations
- K.3.C Data Culture
- K.3.D Privacy and Security
- K.3.E Data Ethics

SKILLS

S.1 Planning

- S.1.A Goals and Questions
- S.1.B Alignment
- S.1.C Data Management
- S.1.D Data Meaning

S.2 Selecting

- S.2.A Data Discovery and Data Acquisition
- S.2.B Critical Evaluation
- S.2.C Development of Measures

S.3 Collecting

- S.3.A Facilitation
- S.3.B Technology
- S.3.C Multiple Measures
- S.3.D Modifications

S.4 Analyzing

- S.4.A Formatting
- S.4.B Data Cleaning
- S.4.C Aligned Analysis
- S.4.D Considerations
- S.4.E Comparisons

S.5 Interpreting

- S.5.A Locating
- S.5.B Representation
- S.5.C Patterns
- S.5.D Congruency

S.6 Communicating

- S.6.A Presentation
- S.6.B Explanation
- S.6.C Multiple Audiences

S.7 Acting

- S.7.A Strategies
- S.7.B Action Plan

PROFESSIONAL BEHAVIORS

B.1 Ethical Use

- B.1.A Data Quality
- B.1.B Transparency
- B.1.C Representation
- B.1.D Ethics
- B.1.E Culture
- B.1.F Use

B.2 Rules and Regulations

- B.2.A Rules and Laws
- B.2.B Protection
- B.2.C Advocacy for Protections

B.3 Collaboration

- B.3.A Collaborative Use
- B.3.B Collaborative Climate
- B.3.C Outreach
- B.3.D Prioritization

B.4 Continuous Improvement

- B.4.A Problem Solving
- B.4.B Improving Outcomes
- B.4.C Professional Development

Appendix B: Data Use Standards Workgroup Members

State	Name	Organization
California	Christina Tydeman	Dominican University of California
Guam	Zeni Natividad	Guam Department of Education
Hawaii	Justin Katahira ²	Hawaii P-20 Partnerships for Education
Hawaii	Christine Sorensen Irvine	Pacific Regional Comprehensive Center; University of Hawaii at Manoa
Idaho	Andy Mehl	Idaho Board of Higher Education
Illinois	Doug Franklin	Illinois Board of Higher Education
Kansas	Eric Punswick	Olathe Public Schools
Kansas	Lori Adams	Kansas State Department of Education
Montana	Brett Carter	Montana Office of Public Instruction
Nebraska	Russ Masco ³	Nebraska Department of Education
Nebraska	Dick Meyer ³	University of Nebraska at Kearney, College of Education
New Hampshire	Irene Koffink	New Hampshire Department of Education
New Hampshire	Mike Schwartz	New Hampshire Department of Education
New York	David Weinberger	Yonkers Public Schools
North Dakota	Nathan Anderson	Mid-Dakota Education Cooperative
North Dakota	Magdalena Brockel	Missouri River Educational Cooperative
North Dakota	Stacy Duffield	North Dakota State University
North Dakota	Amy Engelhard	Education Technology Council
North Dakota	Jen Glasheen	Southeast Education Cooperative
North Dakota	Steve Snow	North Dakota Department of Instruction
Oklahoma	Bryan Duke	University of Central Oklahoma
Oklahoma	James Machell	University of Central Oklahoma
Oklahoma	Susan Pinson	Oklahoma State Department of Education
South Dakota	Sara Kock ⁴	South Dakota Department of Education
Tennessee	Margie Johnson ⁵	Metro Nashville Public Schools
Washington	Melissa Beard	Education Research and Data Center
Washington	Jim DePaepe	Central Washington University

Facilitator

Corey Chatis

SLDS Grant Program State Support Team

² Professional Behaviors Subgroup Lead

³ Skills Subgroup Co-Lead

⁴ Knowledge Subgroup Lead

⁵ Case Studies Subgroup Lead